AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A cable interface circuit comprising:

an RF input for accepting RF signals as well as power ;

an RF output;

an RF tap;

a power tap; and

an isolation circuit for connecting said power from said RF input to said power tap while preventing said power from being delivered to either said RF output or to said RF tap, wherein said isolation circuit is constructed, at least in part, using wave guide techniques.

2. (Currently Amended) The cable interface circuit of claim 1 wherein said isolation circuit is constructed, at least in part, using a co-planar wave guide ~~techniques~~.

3. (Original) The cable interface circuit of claim 1 wherein said isolation circuit is operable for maintaining an insertion and return loss of said RF tap at less than 3.0dB at 5 MHZ.

4. (Original) The cable interface circuit of claim 1 wherein said isolation circuit further comprises:

over voltage protection circuitry for protection against lightning surges.

5. (Original) The cable interface circuit of claim 1 wherein said over voltage protection circuitry includes safety caps.

6. (Original) The cable interface circuit of claim 4 wherein said over voltage protection circuit delivers any said over voltage to a surge protector external to said interface circuit.

7. (Original) The cable interface circuit of claim 4 wherein said isolation circuit and at least a portion of said over voltage protection circuit are constructed using co-planar wave guide techniques.

8. (Original) The cable interface circuit of claim 1 wherein said isolation circuit further comprising:

over voltage protection circuitry for protection against voltages greater than 600 volts.

9. (Original) The cable interface circuit of claim 8 wherein said over voltage protection circuitry includes safety caps.

10. (Original) The cable interface circuit of claim 1 wherein said interface circuit further includes:

cut-off circuitry for selectively receiving RF signals from said RF output.

11. (Original) The cable interface circuit of claim 10 wherein said cut-off circuitry is operable under control of signals received from said RF input.

12. (Original) The cable interface circuit of claim 10 wherein said cut-off circuitry includes relay contacts.

13. (Original) The cable interface circuit of claim 1 wherein said RF tap is bidirectional.

14. (Original) The cable interface circuit of claim 1 wherein said RF tap sends RF signals to an RF receiver contained within said interface circuit and receives RF signals for delivery to said RF input from an RF transmitter contained within said interface circuit.

15. (Currently Amended) A cable interface circuit comprising:

an RF input for accepting RF signals as well as power ;

an RF output;

an RF tap, wherein said RF tap sends RF signals to an RF receiver contained within said interface circuit and receives RF signals for delivery to said RF input from an RF transmitter contained within said interface circuit, and ~~The cable interface circuit of claim 14~~ wherein said RF receiver and said RF transmitter~~tuner~~ include circuitry for communicating with a processor over bidirectional digital links;

a power tap; and

an isolation circuit for connecting said power from said RF input to said power tap while preventing said power from being delivered to either said RF output or to said RF tap.

16. (Original) The cable interface circuit of claim 15 wherein said processor is located remote from said interface circuit.

17. (Original) The cable interface circuit of claim 16 wherein said interface circuit further includes cut-off circuitry for selectively isolating said RF output from said RF input.

18. (Original) The cable interface circuit of claim 17 wherein said cut-off circuitry is operable under control of signals from said processor.

19. (Original) The cable interface circuit of claim 14 wherein said RF tap, said isolation circuit, said RF receiver, and RF transmitter are contained within a single housing.

20. (Original) The cable interface circuit of claim 19 wherein said housing includes a first non-rotational RF network connector connected to both said housing and to said RF input.

21. (Original) The cable interface circuit of claim 20 wherein said connector meets UL standards for power contained on its center conductor.

22. (Original) The cable interface circuit of claim 20 wherein said connector includes an outdoor F-connection for mating with said network connector.

23. (Canceled)

24. (Currently Amended) A self-contained device for receiving signals from a coaxial cable and for delivering received ones of said signals to a tuner within said device, said device comprising:

an input for connection to said cable, said input including isolation circuitry for removing power from said cable and for delivery of said removed power for use in powering said device; said isolation circuitry also including circuitry for delivering lightning surge energy to a separate surge protection device; and said isolation circuitry also including circuitry for protection against voltages in excess of 600 volts, ~~The device of claim 23~~ wherein said isolation circuitry is constructed using co-planar wave guides.

25. (Original) The device of claim 24 wherein said isolation circuitry includes safety caps.

26. (Original) The device of claim 24 wherein said device includes an output for connection to a receiving device, said output operational for receiving signals from said input without significant attenuation.

27. (Original) The device of claim 26 wherein said co-planar wave guides are used to direct said signals.

28. (Original) The device of claim 27 wherein said tuner is bidirectional.

29. (Original) The device of claim 28 wherein signals from said bidirectional tuner are delivered to said cable via said input and not to said receiving device and wherein signals from said input are delivered to both said receiving device and to said tuner, at least in part, by said co-planar wave guides.

30. (Original) The device of claim 29 wherein said input signals and said output to said receiving device are RF signals.

31. (Original) The device of claim 30 wherein said tuner communicates with said input via bidirectional RF signals and wherein said device further includes a digital signal output for bidirectional communication with devices external to said device.

32. (Original) The device of claim 31 wherein said device includes an RF connector rotationally and electrically locked to said device, said connector having a relatively flat outer surface for mating with a network connector.

33. (Original) The device of claim 32 wherein said connector meets UL standard 1950 for electrical creepage and clearance.

34. (Withdrawn) An interface device for use as a front end to an RF processing circuit, said device comprising:

an input coaxial connector, said input connector having a center conductor and an outer shield;

an output connector coaxial connector, said output connector having a center conductor and an outer shield;

a housing for containing said device, said outer shields connected to said housing;

an inductance having one of its terminals connected to said input center conductor, and the other of its terminals connected to a second capacitor and also connected to a power bias tap;

a capacitance having one of its terminals connected to said input center conductor and the other of its terminals connected to the input of a directional coupler, said directional coupler having low insertion loss; and

said directional coupler having an output connected to said center conductor of said output coaxial connector, and having a connection to said RF processing circuit.

35. (Withdrawn) The interface device of claim 34 wherein said directional coupler is connected also to one terminal of a second capacitance and a second terminal of said second capacitance connected to said output center conductor.

36. (Withdrawn) The interface device of claim 35 wherein at least a portion of the connections between said input connector, said output connector, said first capacitor, said inductance and said directional coupler is constructed using co-planar wave guides.

37. (Withdrawn) The interface device of claim 35 wherein said capacitors are safety caps.

38. (Withdrawn) The interface device of claim 36 wherein said housing also includes therein an RF transmitter for transmitting RF signals to said input coaxial cable via said directional coupler, said directional coupler operational for preventing transmitted ones of said RF signals from said RF transmitter from going to said output coaxial connector.

39. (Withdrawn) The interface device of claim 38 wherein said housing includes a digital connector for delivering digital signals to said RF transmitter and for receiving digital signals from said RF receiver.

40. (Original) A method for receiving RF signals from a coaxial cable and for delivering digital representations of received ones of said signals to digital output, said method comprising the steps of:

receiving RF signals from said cable at an RF input;

removing any AC line power received from said cable;

delivering any said removed power for use in powering said method;

removing any lightning surge energy received from said cable and delivery said removed surge energy to a separate surge protection device; and

removing any voltage in excess of 600 volts from any said received signals.

41. (Original) The method of claim 40 wherein said above-identified steps include using co-planar wave guides to transport at least a portion of said received signals.

42. (Original) The method of claim 41 wherein said removing step includes using safety caps.

43. (Original) The method of claim 41 further including the step of delivery to an RF output received ones of said RF signals from said input without significant attenuation, and without any power or lightning surges present at said RF output from said input.

44. (Original) The method of claim 43 wherein said co-planar wave guides are used to deliver said RF signals to said RF output.

45. (Original) The method of claim 44 wherein input RF signals are delivered to a bidirectional tuner and wherein signals from said bidirectional tuner are delivered to said RF input and not to said RF output and wherein RF signals from said RF input are delivered to both said RF output and to said tuner, at least in part, by said co-planar wave guides.

46. (Original) The method of claim 45 wherein said method is practiced entirely within a self-contained device.

47. (Original) The method of claim 45 wherein said bidirectional tuner communicates with devices external to said self-contained device via a bidirectional digital link.

48. (Currently Amended) A cable interface circuit comprising:

an RF input for accepting RF signals as well as power ;

an RF output;

an RF tap;

a power tap; and

means for connecting said power from said RF input to said power tap while preventing said power from being delivered to either said RF output or to said RF tap wherein said connecting means is constructed, at least in part, using a wave guide.

49. (Original) he cable interface circuit of claim 48 wherein said connecting means is constructed, at least in part, using co-planar wave guide techniques.

50. (Original) The cable interface circuit of claim 48 wherein said connecting means is operable for maintaining an insertion and return loss of said RF tap at less than 3.0dB at 5 MHZ.

51. (Original) The cable interface circuit of claim 48 wherein said RF tap sends RF signals to an RF receiver contained within said interface circuit and receives RF signals for delivery to said RF input from an RF transmitter contained within said interface circuit.

52. (Original) The cable interface circuit of claim 51 wherein said RF receiver and said RF tuner include means for communicating with a processor over bidirectional digital links.

53. (Original) The cable interface circuit of claim 52 wherein said interface circuit further includes means for selectively isolating said RF output from said RF input.

54. (Original) The cable interface circuit of claim 53 wherein said isolating means is operable under control of signals from said processor.